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Typed Name: Kevin D. McCarthy  
Date: November 6, 2008

Patent 0-06-172 (17660/US/04 CIP)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Inventor: Bron et al.  
Serial no.: 10/588,398  
Int. Filed: May 30, 2005  
Submitted to USPTO: August 3, 2006  
Title: SCORCH PREVENTION IN FLEXIBLE  
POLYURETHANE FOAMS  
Examiner: Melissa A. Winkler  
Art Unit: 1796  
Confirmation: 8382

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir/Madam:

**Response to Office Action**

This response is in reply to the office action mailed on August 7, 2008.

Claims Rejection - 35 USC § 103

Claims 1 - 7, 12 - 20, 25 and 26 are rejected as being unpatentable over Barry et al. (US 5,338,478), and further in view of Imai et al. (US 4,525,420). The Applicant respectfully traverses the Examiner's rejection.

Barry et al. relate to a stabilizer composition for preventing scorching in polyurethane foams containing flame retardants. However, Barry et al. do not teach a composition comprising an epoxy compound. Moreover, Barry et al. do not teach nor suggest that metal salts of carboxylic acid may be used as antiscorching agents, but use said salts as foaming catalysts (col. 4, lines 39 and 48), which is well known in the art.

Imai et al. relate to polyurethane elastic yarns improved in spinning property, light resistance and chlorine resistance. Imai et al. relate to the optional use of a discoloration inhibitor, namely an adduct of bisphenol A diglycidyl ether and dimethylhydrazine (col. 5, lines 49-51), to increase the resistance to discoloration due to light (col. 6, lines 38-39; and Table 1). It is obvious for a person skilled in the art that an epoxy compound, such as bisphenol A diglycidyl ether, will react with an equimolar amount of amino-group of the hydrazine; the resulting adduct is therefore not a free epoxy compound as disclosed in the present invention and no free epoxy is added to the compositions of the

cited documents. Imai et al. do not teach nor suggest that bisphenol A diglycidyl ether has, alone, an anti-scorching effect in exothermal reactions during the production of flame retarded flexible polyurethane foams, which is an unexpected property of said epoxy compound. This property is clearly shown in Table 2, col.11, of the present application.

Therefore, Imai et al. would not have led a person of ordinary skill in the art to use epoxy compounds and more particularly bisphenol A diglycidyl ether in compositions preventing scorching effects in flame retarded polyurethane foams. Consequently, the Applicant believes that claims 1 - 7, 12 - 20, 25 and 26, are non-obvious and inventive over US 5,338,478, and in view of US 4,525,420.

Claims 8 - 11 and 21 - 24 are rejected as being unpatentable over Barry et al. (US 5,338,478), in view of Imai et al. (US 4,525,420), as evidenced by Horacek et al. (US 5,106,883). The Applicant respectfully traverses the Examiner's rejection.

Barry et al. use Thermolin 101 as flame retardant (Example 2) which is, as disclosed in Horacek et al, ethylene glycol bis(di-2-chloroethyl phosphate). Such flame retardants are well known in the art. However, the Applicant respectfully submits that scorching effects in fire-retarded flexible polyurethane foams are very specific issues, both in term of chemical and physical properties. The scorch intensity, and the tendency to develop scorch as well, depend among other parameters on flame retardant type and combinations, water level in the formulation, environmental parameters, the technology for foam production, and also on the slab stock size. The variety of anti scorch compositions of the invention, which all include a new anti-scorching agent, namely an epoxy compound, provides a versatile, cost-effective, means for designing a tailor-made anti scorch combination for various flame retardants and for different polyurethane foams.

Therefore, while Barry et al. use a particular halogenated phosphorous-based flame retardant, Barry et al. do not teach nor suggest that their stabilizing composition may be used with different types of flame retardant, as disclosed in the present invention. Consequently, the Applicant believes that claims 8 - 11 and 21 - 24, are non-obvious and inventive over US 5,338,478, in view of US 4,525,420, as evidenced by US 5,106,883.

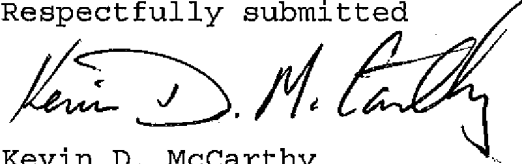
#### Conclusion

It is believed that in view of the above explanations, the instant claims define a novel and non-obvious invention. It has been shown that US 5,338,478 and US 4,525,420, alone or in combination, do not teach nor suggest:

- compositions for preventing scorching effect in fire-retarded polyurethane foams comprising an epoxy compound;
- the use of metal salts of carboxylic acid as antiscorching agent; and
- that their stabilizing composition may be used with different types of flame retardant.
- a person skilled in the art would not have considered an epoxy compound, used alone, as antiscorching agent during exothermic production of fire-retarded polyurethane foams.

It is believed that all of the rejections set forth in the Office Action have been fully addressed. Favorable reconsideration and allowance are earnestly solicited.

Respectfully submitted

A handwritten signature in black ink, appearing to read "Kevin D. McCarthy". The signature is stylized with a large, sweeping "K" and "M".

Kevin D. McCarthy  
Reg. No. 35,278

Roach, Brown, McCarthy & Gruber, P.C.  
1920 Liberty Building - 424 Main Street  
Buffalo, New York 14202